CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

March 10, 2010

Alan Pollock
Department of Environmental Quality
P.O. Box 1105
Richmond, Virginia 23218

Russ Perkinson
Virginia Department of Conservation and Recreation
203 Governor Street
Richmond, VA 23219

Dear Al and Russ:

Thank you for the opportunity provided to the Chesapeake Bay Foundation (CBF) as a member of the Stakeholder Advisory Group (SAG) to provide comments on the February 25, 2010 draft of the "Chesapeake Bay TMDL Source Sector Allocation Worksheets for Virginia" (Worksheets). We would welcome the opportunity to discuss these recommendations with you both at your convenience.

Wastewater

As discussed briefly at the SAG meeting, CBF recommends that the Commonwealth consider additional reductions from significant and non-significant wastewater treatment facilities. By our rough approximation, Virginia could reduce an additional 1.7 million pounds of TN and 134,000 pounds of TP if all significant municipal wastewater treatment facilities, except the 11 in the Lower James River, install state-of-the-art technologies. Further reductions can be achieved if non-significant facilities that discharge greater than 1,000 gallons per day (GPD) install biological nutrient removal. Failing to capture all potential reductions from point sources within the 15-year planning period will place a greater and more difficult burden on nonpoint sources.

To address future growth, Virginia must require the complete offset of nutrient loads from new and expanding municipal and industrial wastewater discharges.

Agriculture

It is not clear in the draft Worksheet for agriculture whether Virginia intends to propose a waste load allocation (WLA) for permitted agriculture

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operations ("CAFOs") and an aggregate load allocation (LA) for non-permitted operations ("Non-CAFOs"). Please specify that Virginia's strategy will in fact provide both WLAs and LAs for agriculture.

There is broad recognition and agreement that baseline data on agriculture best management practices (BMPs) does not incorporate all appropriate information regarding BMP implementation. The Draft Enhanced Program Implementation Levels (VaEPIL) should be adjusted if it is determined, with updated information, that these levels would not result in additional pollution reductions. Alternatively, documenting additional coverage for a BMP may allow some flexibility to focus resources and planning to increase implementation levels of other under-utilized BMPs.

CBF finds that the 2017 implementation levels are conservative. For instance, many small animal feeding operations do not currently have waste management systems, yet they may be required to implement a nutrient management plan (which would necessitate manure storage) under state and federal cost-share programs. Therefore, a higher percentage of operations should be expected to install waste management systems.

Virginia should place greater emphasis on reducing ammonia emissions from animal feeding operations. The draft Worksheet only vaguely references "ammonia reduction technologies." CBF recommends that Virginia undertake a more thorough analysis of the contributions of ammonia emissions from agriculture to nitrogen loadings in the Chesapeake Bay and potential reductions that can be achieved from this source.

We believe that "precision agriculture" will be well received by the farming community and recommend greater emphasis on that BMP. This practice will require significant investment in technical assistance.

Virginia must also develop a strategy for addressing additional loadings from new or expanded agriculture operations, including animal agriculture.

Urban/Suburban Runoff (Stormwater)

It is not clear in the draft Worksheet for stormwater whether Virginia intends to propose a waste load allocation (WLA) for existing MS4s (Phase 1), an aggregate WLA for existing MS4s (Phase 2), and a load allocation (LA) for existing development or "Non-MS4s." Please specify that Virginia's strategy will in fact provide both WLAs and LAs for stormwater inputs.

To address future growth, Virginia must require the offset of additional nutrient loads not reduced on-site from new and expanding urban and suburban runoff. Additional loads should not be assigned an allocation under the TMDL.

CBF finds that the draft VaEPIL provides only a limited list of urban and suburban BMPs. We encourage Virginia to consider expanding the menu of alternatives available to better manage and reduce stormwater pollution, such as more widespread use of urban nutrient management plans,

management of pet and waterfowl waste, enhanced maintenance of existing stormwater infrastructure, and progressively enhanced emphasis on retrofits through 2025.

On-Site Systems

CBF recommends that Virginia incorporate additional reductions from on-site systems in the draft VaEPILs by requiring nitrogen reducing technology for all replacement systems and all new systems constructed prior to 2017. To address future growth, CBF recommends that Virginia require the complete offset of nutrient loads from all new systems constructed after 2017.

All Sources

This may be implicit in your draft Worksheet, but, if not, we recommend Virginia consider the load reductions attributable to expanded enforcement of existing laws and regulations, including, but not limited to, the Chesapeake Bay Preservation Act, State Water Control Law, Clean Water Act, Agricultural Stewardship Act, and the Virginia Erosion and Sedimentation Control Law.

Furthermore, several Worksheets indicate that "significant funding increases, additional staff providing technical assistance, and/or additional legal authorities would be necessary to achieve this overall level of enhanced implementation." CBF concurs with this statement; however, we will hold additional comment on specific needs for funding, staffing, or new authorities pending Virginia's more detailed analysis of potential gaps. We hope to work with Virginia and the SAG members to find those most-effective and efficient solutions that will lead to immediate, long-term, and lasting improvements in water quality.

We again appreciate this opportunity to comment and are available to discuss these comments if you have any questions or need additional information. We look forward to providing additional input through the SAG and the public review periods for Virginia's Chesapeake Bay TMDL and Watershed Implementation Plan.

Sincerely,

Ann F. Jennings
Virginia Executive Director

cc: Ellen Gilinsky, DEQ
Jack Frye, DCR
Ann Carkhuff, EPA
Jeff Corbin, EPA
Mike Gerel, CBF
Kristen Hughes, CBF
Beth McGee, CBF

Butt, Arthur (DEQ)

From: Deirdre Clark [dbclark@rrregion.org]
Sent: Wednesday, March 10, 2010 3:53 PM
To: avosper@novaregion.org
Cc: Perkinson, H. (DCR); Pollock, Alan (DEQ)
Subject: Bay TMDL Comments

Hello Aimee,

Please find listed below a number of comments/concerns/questions generated during general discussion with various groups within our region. It should be noted that **the following do not reflect the opinions or views of our Board -**

With regard to the "Draft Ches Bay TMDL –VA's Approach for Setting Initial Source Sector Allocations in the Watershed Implementation Plans"

1. Provide credentials for "experts."
2. Has the Nutrient Credit Exchange Program demonstrably reduced net nutrient impacts to the Bay, or has it just reduced impacts from specific sites? Explain.
3. 90% compliance with E&S regs (20 years after adoption) as documented in program review, does not account for the lack of enforcement by localities as experienced by field inspectors. Many find that there is little or no interest in enforcement of environmental regulation of any kind, especially if such enforcement negatively impacts economic development or individual political interests.
4. Under "How has the Program Changed…" reference is made to the "TMDL for the Bay and its **tidal** rivers." Does the program exclude contributing watersheds above the Fall Line? If so, will such a focus compromise funding for programs to address impaired water quality issues identified in upper watersheds?
5. Few political jurisdictions above the Fall Line have adopted the provisions of the Ches Bay Preservation Act and, therefore, have little or no water quality protection incentives/requirements. Attention to impacts and implementation of bmps should be watershed-wide.
6. Since education is critical to public acceptance of this initiative, why were no public hearings held above the Fall Line in the Rappahannock basin?

In consideration of the document, Chesapeake Bay TMDL Source Sector Allocation Worksheets …"

1. Do composted poultry become part of the "litter" waste-stream? What is done with composted remains? Is incineration used?
2. Consideration should be given to addressing impacts from confined canine facilities.
3. Urban/Suburban runoff – include consideration for pet waste management strategies.
4. Why is there no attainment chart for the urban sector?
5. Does "urban land retro-fit or redevelopment" include removal of impervious surfaces?

General questions and comments-

1. The fact that many BMPs, and acres served, are undercounted has been discussed at length at several meetings. Although a precise count may help guide future decisions, it seems that the time and energy devoted to such discussion is wasted due to the fact that the existing practices, counted or not, are apparently inadequate
2. Limited budgets and reduced staffing will hamper implementation and enforcement initiatives.
3. An integrated tracking, servicing and inspecting mechanism for on-site sewage treatment facilities is needed.

4. Recommendation – cross-reference accomplishments made in the field with DEQ monitoring data. That data must be included in the WIP, as must some level of relevance to Bay indicators.
5. Don't limit the 2025 input deck to those Ag BMPs listed. It should include other practices; for example, streamside buffers managed as such, not managed just as land outside the fence…..
6. Contract the WIP to the private sector.

Thank you for the opportunity to pass along the concerns of individuals within our region –

Deirdre

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March 10, 2010

Mr. Allan Pollock
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Mr. Russ Perkinson
Virginia Dept. of Conservation and Recreation
203 Governor Street
Richmond, VA 23219

Dear Allan and Rus,

Thank you for the opportunity to comment on Virginia's Approach for Setting Initial Source Sector Allocations in the Watershed Implementation Plans. I appreciate the time and effort that you have devoted to developing this framework and look forward to discussing them further in the future. Below are my initial comments on the draft approach and worksheets. I believe additional investigation and discussion is required on the details and specific actions suggested for each sector, so my comments today focus on the general approach.

- Set pollution reduction goals for each sector, not just "input deck" actions – Although developing specific actions for each sector is a critical component to developing the source allocation, if those alone are the basis of the allocation then each source sector has the incentive to decrease the actions that are included. We saw evidence of this during the SAG meeting on February 26. I believe the process would be greatly enhanced if preliminary pollution reduction targets were set for each sector as well so that there is an incentive for each sector to find the most effective set of actions to meet the goal. That way, if a practice is eliminated or reduced, there is an expectation that some other action is needed to make up the difference. The goals would also ensure equitable effort from each source sector.

  There are numerous ways that the goals could be set. Here are three alternatives for your consideration:
  - Assign same proportion of total reductions needed from 1985 levels as each sector had in the 2005 tributary strategies (just update for the new total VA allocation and Model 5.3 numbers)
  - Reductions achieved through implementing 70% of E3 (same principle that was used to determine state allocations)

    - Flat percent reduction from 1985 levels for each source sector (This approach would rely heavily on trading to make it cost efficient).
- Wastewater reductions beyond those required in the current watershed permit should be considered. Particularly in the James River basin, where the chlorophyll standards will be focused on low flow conditions when wastewater discharges play an even greater role, additional reductions from wastewater may be the most effective approach to achieving necessary reductions. The nutrient credit exchange would allow the reductions to be achieved over time in the most cost efficient manner and the watershed permit is up for renewal in a timeframe consistent with the development of the WIP.
- Meetings for each source sector should be held to provide an opportunity for interested stakeholders to discuss their respective sectors in greater detail and ensure that each sector has ample opportunity to understand and comment on the draft approach.
- Sources within each sector that require a water quality permit should be identified and greater expectation of implementation should be expected.

As we continue to review the draft approach and as discussions carry on, we will supply additional comments on the specific actions and implementation levels for the source sectors. Thanks again for the opportunity to comment. If you have any questions or would like to talk further about our suggestions, please feel free to email or call me.

Sincerely,

William H. Street
Executive Director

VAMWA'S PRELIMINARY COMMENTS ON THE COMMONWEALTH'S PROPOSED NUTRIENT ALLOCATION APPROACH

March 12, 2010

The Virginia Association of Municipal Wastewater Agencies, Inc. (VAMWA) respectfully submits the following comments on Chesapeake Bay TMDL Source Sector Allocation Worksheets for Virginia. VAMWA is a non-profit environmental association that includes the owners and operators of municipal wastewater treatment plants throughout Virginia. Many of VAMWA's member clean and then discharge highly treated wastewater to Chesapeake Bay tributaries pursuant to Virginia Pollutant Discharge Elimination System (VPDES) permits. VAMWA members are among the leaders in the Chesapeake Bay cleanup and have invested or are in the process of investing approximately two billion dollars to upgrade their public facilities to remove nutrients from residents, businesses and institutions located in their service areas.

The Commonwealth's Proposals for Municipal Wastewater Are Challenging But Reasonable and Appropriate Considering Virginia's Stringent Law and Regulations

The Commonwealth's February 26, 2010 "Chesapeake Bay TMDL Source Sector Allocation Worksheets for Virginia," laid out a detailed approach to developing wasteload allocations ("WLAs") for municipal wastewater treatment facilities. The WLAs would be derived primarily from Virginia's Water Quality Management Planning ("WQMP") Regulation (9VAC25-720), Virginia's Chesapeake Bay Watershed General Permit Regulation (9VAC25-820), and "all SWCB-approved amendments" to those regulations. Although this is a very challenging proposition for our sector, VAMWA recognizes that these allocations have been established by State law and regulations. Accordingly, VAMWA supports this approach for municipal wastewater.

With the agreement of local government organizations including VAMWA and of major citizen environmental groups, the State Water Control Board adopted a package of stringent regulations in 2005 and a related permitting regulation in 2007 that established a comprehensive program for the (early) regulation of municipal dischargers. These included:

- Water Quality Management Planning Regulation Amendments, 9VAC25-720
- Nutrient Enriched Waters Policy Amendments, 9VAC25-40-70
- Watershed General Permit Regulation, 9VAC25-820

These regulations were developed pursuant to a statute enacted in 2005 and codified at Virginia Code § 62.1-44.19:12 *et seq*.

Extensive deliberations and efforts went into the statewide effort to develop Virginia's regulatory wasteload allocations. It is not practical or necessary to reiterate all of those considerations here, given the final action taken by the State Water Control Board in 2005 and the major investments by the Commonwealth and its local governments based on that recent decision.

Based on the referenced statute and regulations of the State Water Control Board, the Virginia Nutrient Credit Exchange Association, Inc. (the "Nutrient Exchange") was created, and the Nutrient Exchange and its participants have developed the Exchange Compliance Plan. This represents the most extensive, proactive effort to plan and construct municipal wastewater treatment in Virginia since national requirement for secondary treatment established in the 1970s. The Compliance Plan addresses how 110 participating facilities will achieve and maintain compliance with their regulatory nutrient allocations beginning January 1, 2011. DEQ has approved the Nutrient Exchange's Compliance Plan each year beginning with the first such plan in 2007.

The approved Exchange Compliance Plan is based on construction of a large number of advanced nutrient removal facilities throughout the five major river basins as well as a number of temporary nutrient credit trades pursuant to the State Water Control Law's Chesapeake Bay Nutrient Credit Exchange Program article and the Board's Watershed General Permit. These trades are also contractual obligations of the participants through the complex, multi-party Nutrient Credit Services Agreement, which was executed by the parties in 2007.

To help support this construction program and related nutrient credit trading, the General Assembly has appropriated over $600 million in cost-share funding for treatment upgrades. The projects are constructed by the facility owners, and the State cost-share funding is disbursed, in accordance with the terms and conditions of numerous individual Water Quality Improvement Fund Grant Agreements to which DEQ is a party.

As a result of these many efforts by the Commonwealth and local governments, Virginia is in the fortunate position of being able to testify in a recent congressional hearing to Virginia's remarkable progress, including the expectation of meeting its regulatory point source allocations by the December 31, 2010 deadline. In his September 2009 testimony before the Subcommittee on Water Resources and the Environment of the House Committee on Transportation and Infrastructure, Virginia's Secretary of Natural Resources highlighted the State's financial participation and commended the Nutrient Exchange for its role in facilitating the nutrient upgrades and related credit exchanges.

Because Virginia and its local government partners have pressed ahead with the point source regulations, investments, contracts and treatment upgrades to meet the 2010 cleanup deadline, Virginia's portion of the Bay TMDL should reward this unprecedented investment with regulatory stability.

Because of the significant investment made by local governments and the Commonwealth (as well as other Bay states), the EPA Regional Administrator publicly agreed that regulatory stability is a "priority need" and a "matter of fiduciary responsibility and public trust:"

> … EPA acknowledges the large scale public investments (estimated at over $4 billion) that are now being carried out throughout the watershed to upgrade and reduce nutrient discharges from point sources. ***A stable regulatory environment is a priority need for these facilities and a matter of fiduciary responsibility and public trust.*** Therefore, EPA considers requiring further point source upgrades to the limits of technology as an option of last resort and is avoidable if the Bay partners use our creative energies to deliver sufficient nonpoint pollutant reduction commitments.

Letter dated Sept. 11, 2008, from Donald S. Welsh, EPA Region III, to John Griffin, Maryland DRN, Enclosure A at 4 (emphasis added).

The Office of Inspector General has also agreed that allocations for significant wastewater treatment facilities should remain unchanged:

> Although EPA and its Bay partners could obtain additional nutrient reductions from significant municipal wastewater treatment facilities…, these additional reductions are not cost effective or practical. Obtaining these additional reductions would require justifying additional expenditures, recalculating wasteload allocations, and reopening and modifying permits already being put in place. At this point, EPA has no plans to require additional reductions from wastewater treatment facilities.

2008 USEPA Office of Inspector General's Report (08-P-0049).

We do wish to note the critical need for the availability of sufficient treatment capacity with regard to Virginia's future economic development and environmental protection. It is imperative that Virginia's stringent wasteload allocations for municipal treatment facilities not be cut. This is necessary among other reasons to maintain the capability to serve economic growth with advanced treatment rather than have Virginia become dependent on greenfield development using less efficient septic systems. Centralized wastewater treatment facilities are far superior in nitrogen removal compared to on-site disposal system options.

VAMWA would note that reliance on offsets for the ability to have and serve economic development with centralized municipal systems is unrealistic at this time. Although VAMWA supports innovative trading programs and policies, and has participated in the development of the Nutrient Exchange, offsets are not presently available in Virginia as a long-term option. The Nutrient Exchange is purely a temporary, point-to-point trading system. Point-nonpoint trading is in its infancy and its capacity to be economically viable is highly questionable under current Virginia policy.

VAMWA also supports the criteria for developing the WIPs that were presented during the February 26, 2010 Stakeholders Advisory Group meeting (equitable, feasibility to meet goals, cost-effectiveness, and defensible in addressing TMDL goals). We view the Commonwealth's proposed approach to municipal wastewater as consistent with these criteria.

Virginia's WIP Process Would Benefit from a Broader Vision

Oysters and Other Filter Feeders – VAMWA has long supported policies to increase Virginia's stock of natural filter feeders such as oysters that not only provide a valuable fishery but also clean the Bay by filtration. Various studies and the CBPO's modeling have demonstrated that increasing the biomass of filter feeders such as oysters may produce improvements. Improvements in these living resources are among the Bay partner's most important goals, and their water quality benefits should be fully considered during the WIP development process. Virginia should be committed to increasing the populations of these natural filters and reflect that commitment by planning and receiving credit for filter feeder restoration and associated nutrient removal in the Bay TMDL and WIP.

Air Deposition – EPA has estimated that atmospheric sources account for about one third of the nitrogen that reaches the Bay, and that much of this load originates from outside the Chesapeake Bay watershed. Given the magnitude of the nutrient load added by atmospheric sources, it is critical that these sources bear a proportional responsibility for load reduction, including those from outside of Virginia and the Bay States.

Alternative Technologies – Virginia should look to the potential of emerging, alternative technologies in the WIP. The Algal Turf Scrubber® ("ATS") is an example of an emerging, alternative technology for nutrient removal. In this technology, nutrients are removed from surface waters by passing the water over attached, harvestable algae. According to an article in the March 2009 edition of *Chesapeake Quarterly* ("River of Opportunity Innovation for a Cleaner Chesapeake"), researchers are piloting the ATS on the Susquehanna River. ATS technology is a very effective way to remove nutrients (ATS can be 50 times more successful than cover crops) and it creates a byproduct that could be used for biofuel. And, although ATS are space-intensive and expensive, one researcher estimates that a 3,000 acre system "could remove the entire Susquehanna portion of excess phosphorous delivered to the Chesapeake Bay (three million pounds per year)" and could inject 200 million pounds of oxygen per year (enough to potentially "remove algal blooms from the upper Bay and to make a sizeable dent in the extent of the hypoxia in the main stem.") One Virginia locality is currently pilot-testing an "algae wheel" using this type of technology. Other versions of this concept utilize macroalgae to remove nutrients directly from tidal waters.

Floating wetlands is another example of a new technology that has garnered a great deal of attention recently. These islands are constructed from plastic materials and are seeded with plants that will grow by removing nutrients from the water underneath. According to a November 21, 2009 *Baltimore Sun* article, the City of Annapolis is planning to launch a floating wetland as a way to gauge "whether the technology can be implemented in larger areas of the bay." Several companies market these products across the U.S.

For a successful Bay cleanup, VAMWA recommends that the Commonwealth support promising new technologies and provide a role for these technologies in meeting water quality goals under the WIP.

Credit Should Be Given All BMPs Under Reasonable Assumptions of Effectiveness

The efficiencies of various BMPs appear to have been excessively discounted in recent EPA models. In addition to BMPs that some stakeholders have identified as having been installed but given no credit in the computer model, this assumption of low efficiency suggests that nonpoint sources are also not being given proper credit in the model for BMPs that are properly designed, operated, and maintained. In other words, by using conservatively low efficiency values, the models effectively assume that BMPs will be designed or operated poorly. Unless corrected, this will have the effect of driving more nonpoint source obligations than is otherwise necessary or increasing the likelihood that Virginia will not meet its goals.

Here are a few examples where conservative BMP efficiencies were selected for use with the Phase 5 watershed model may fail to give adequate credit to Virginia sources: riparian buffers ("…a 20% reduction in the effectiveness values is applied to efficiencies from literature sources…"), urban wet ponds and wetlands ("The uncertainty in how improper maintenance will adjust BMP efficiencies supports the recommendation to use a more conservative percent removal estimate"), dry detention basins ("…effectiveness estimates for Dry Detention Ponds/Basins and Hydrodynamic Structures were not changed based on the recommendation of the USWG. However…the available literature does suggest somewhat higher removal rates…"), bioretention ("The 10% TN concentration reduction [is] a conservative judgment…"), vegetated open channel ("A more conservative value from the CWP estimate was selected…"), permeable pavement ("…a conservative approach is taken to estimating permeable pavement and paver performance"), infiltration basins and trenches ("…a 15% reduction in TN is used here for systems with sand or vegetation, and 0% TN removal for systems without sand and/or vegetation, to be consistent with the other infiltration and filtration BMPs in this report and to be conservative"), and off-stream water ("…we proposed close to the conservative literature base").

Virginia should also work with EPA to ensure that models and related tracking tools account for the benefits of all significant pollution reduction efforts. In addition to addressing whether low BMP efficiency assumptions are appropriate, this would also include identifying and crediting voluntary agricultural BMPs and public outreach and education programs.

USEPA's Statements Regarding Implementation Milestones, Deadlines (2017 and 2025) and Consequences May Be Unrealistic

While VAMWA wholly supports the Bay restoration, VAMWA would caution Virginia to confirm that USEPA's letters and other informal guidance do not establish unrealistic targets or otherwise set Virginia up failure.

Given the magnitude of the required reductions, it seems evident that significant "capacity" building will be needed in terms State policy and federal and State funding. A reasonable amount of time will be needed to build that capacity and appropriate adequate funding – a

challenge that is particularly great given the current State budget predicament. Virginia is entitled to an adequate amount of time to do so.

Furthermore, WIPs are not derived from CWA 303(d) authority and are not subject to EPA approval or disapproval. As far as the TMDL itself is concerned, reasonable assurance will be satisfied if Virginia acts in good faith to develop and pursue reasonable two-year milestones. Indeed, doing so is far more proactive than EPA typically requires in the tens of thousands of TMDLs that have been developed and approved nationwide.

In terms of any planning related to the risk of failure to meet a milestone or other goal, Virginia's WIP should not impose "consequences" on any one party or sector for actions or inactions related to another. In other words, if the air deposition sector, for example, is unsuccessful in meeting goals, the air deposition sector should be responsible for making up its own shortfall.

* * *